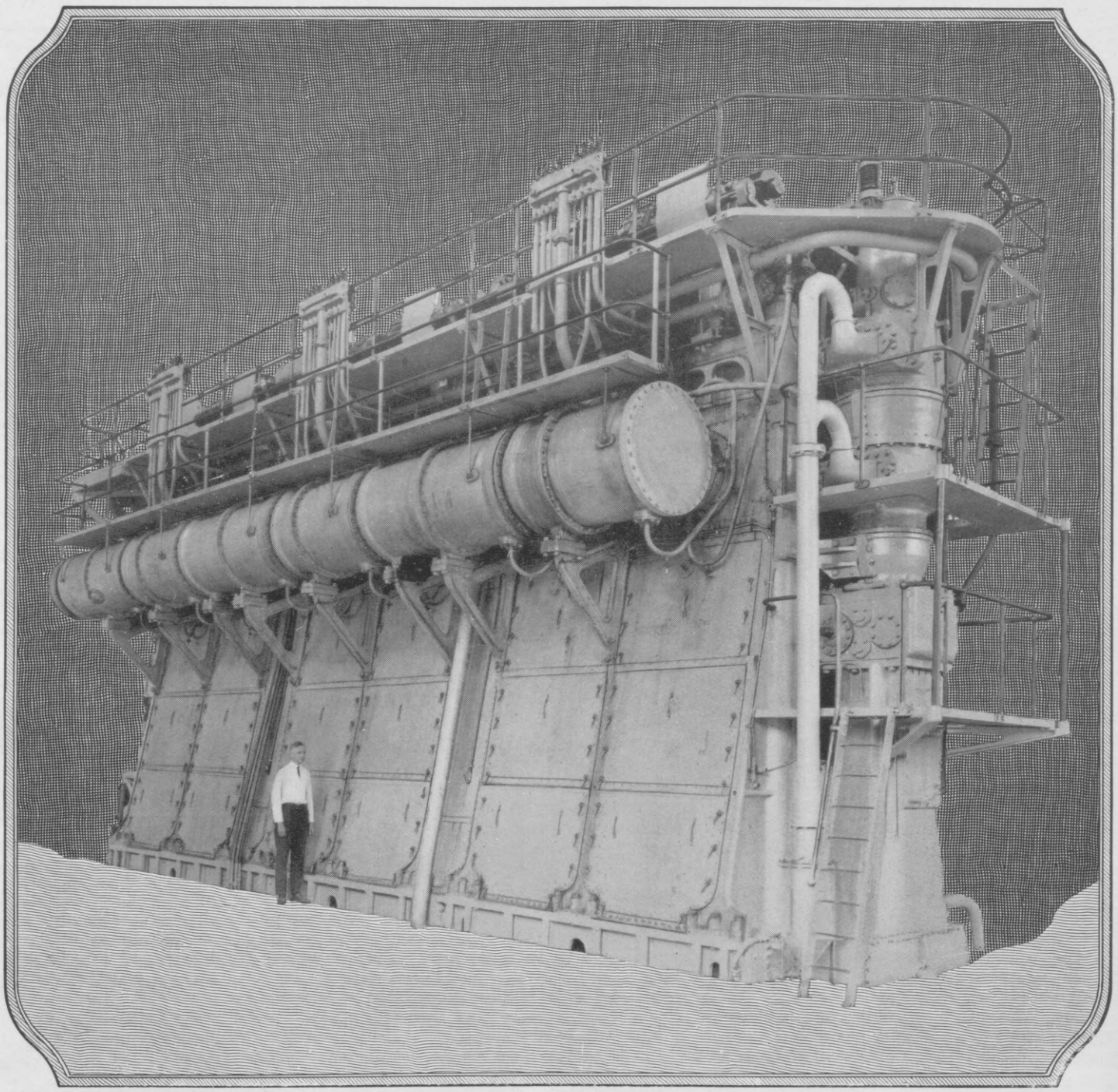
"MOTORSHIP" for January, 1924. Vol. 9, No. 1. A monthly journal published by Motorship, at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars, fifty cents foreign. Entered as second-class matter at the Post Office at New York, N. Y., U. S. A., July, 1918, under Act of March 3rd, 1879. Office of publication, 27 Pearl St., New York City.

"MOTORSHIP" for February, 1924. Vol. IX, No. 2. A monthly journal published by MOTORSHIP, Lyon Block, Albany, N. Y. Editorial, Advertising and Subscription offices at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign. Second class entry at Post Office at Albany, N. Y. pending.

Bethlehem perfects two-cycle, high-



The Bethlehem Oil Engine is of the two-stroke cycle single-acting type, and runs at 90 R.P.M. for single screw and 115 R.P.M. for twin screw vessels. Fuel is injected into the cylinders in a highly atomized form by the aid of compressed air, ignition being caused solely by the heat of the compressed air into which the fuel is injected.

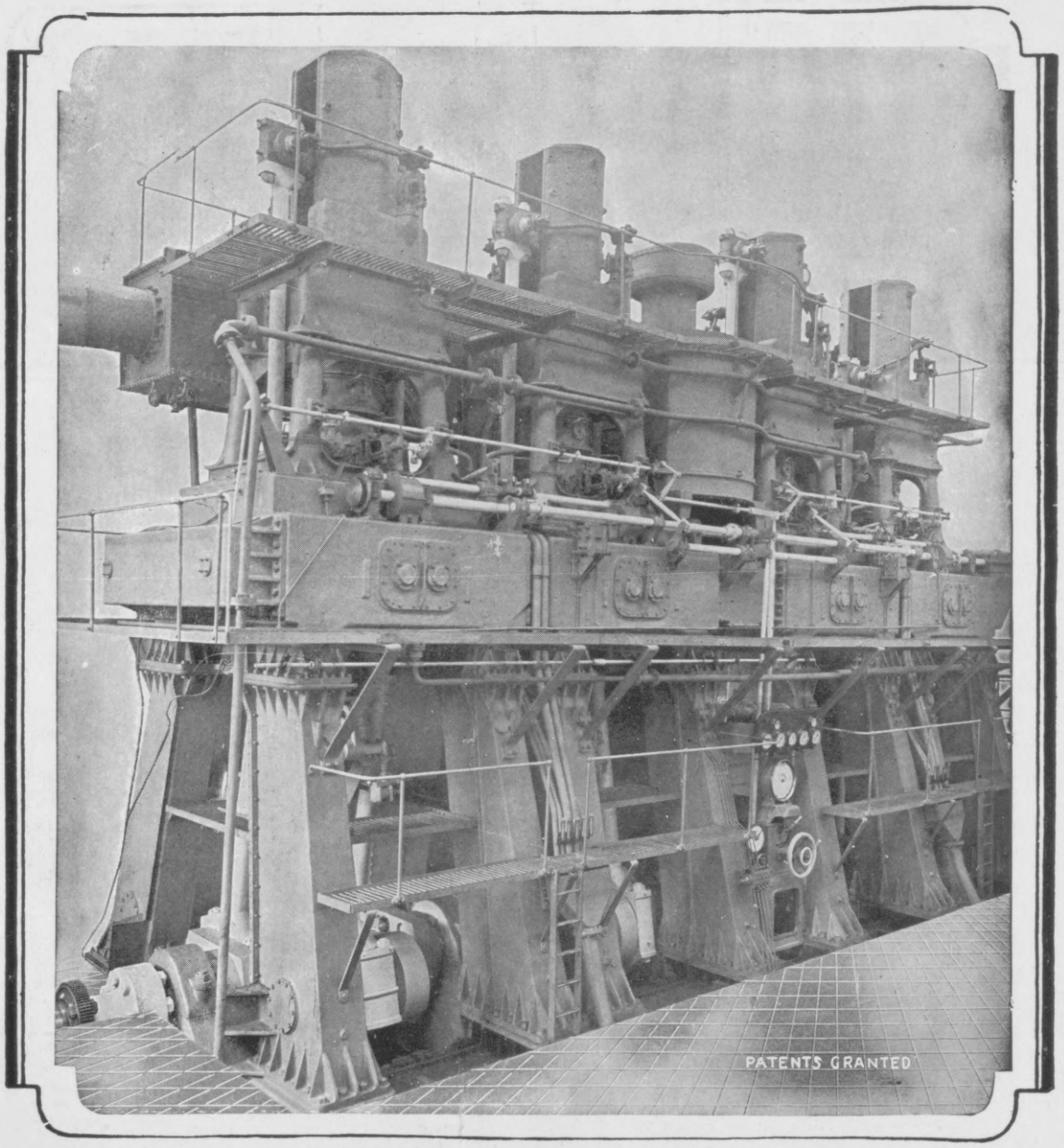
"MOTORSHIP" for March, 1924. Vol. IX, No. 3. A monthly journal published by MOTORSHIP, Lyon Block, Albany, N. Y. Editorial, Advertising and Subscription offices at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign. Second class entry at Post Office at Albany, N. Y. pending.

SUN SHIPBUILDING & DIESEL

BUILDERS OF ALL TYPES OF VESSELS

Builders and Sole

SUN-DOXFORD TWO-CYCLE



42,000 H. P. of Sun-Doxford Diesel Engines under construction for all purposes.

3000 I. H. P. at 76 R. P. M.
ON SINGLE SCREW

SUN-DOXFORD AND

PHILADELPHIA OFFICE
FINANCE BUILDING

MAIN OFFICE
CHESTER, PA.

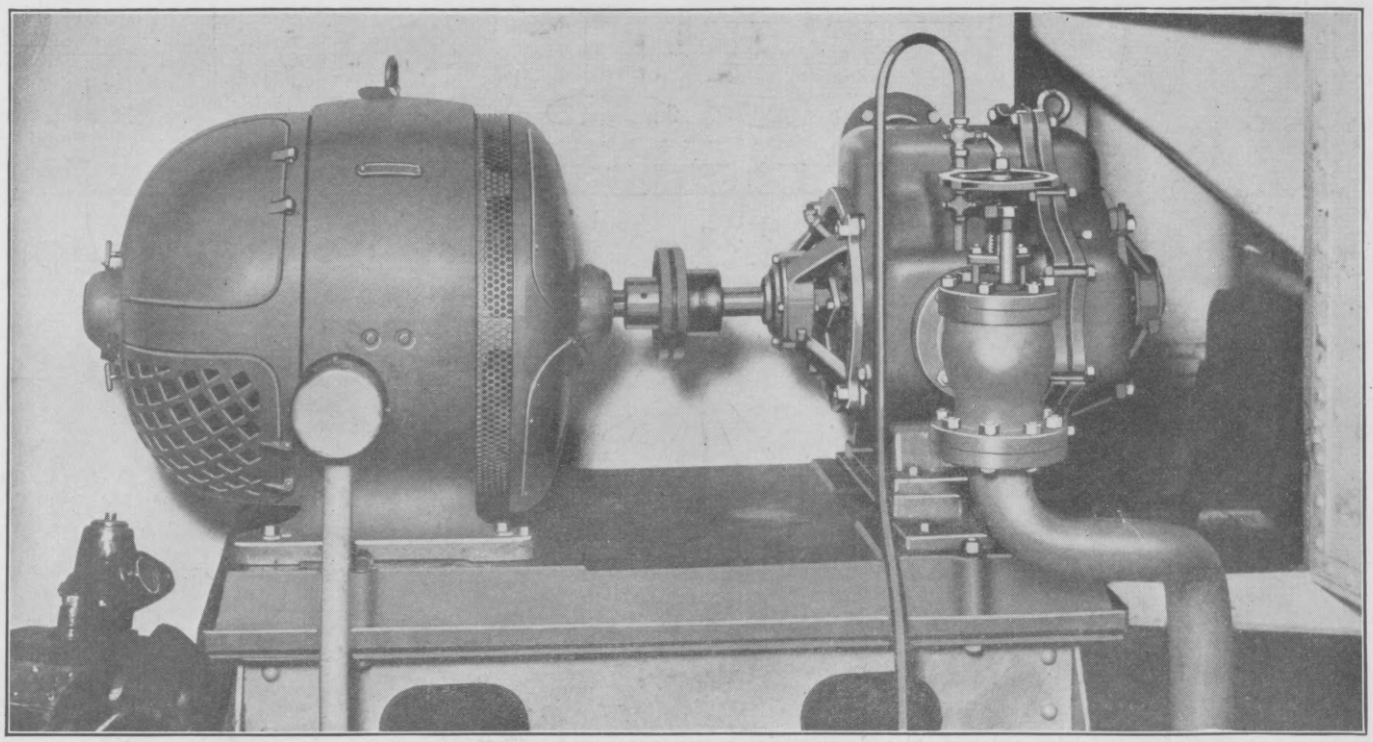
"MOTORSHIP" for April, 1924. Vol. IX, No. 4. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising and Subscription office at 27 Pearl Street, New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign.

"MOTORSHIP" for May, 1924. Vol. IX, No. 5. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising a
Subscription office at 27 Pearl Street, New York City. Subscription three dollars the year, domestic; three dollars fifty cents, foreign

"MOTORSHIP" for June, 1924, Vol. IX, No. 6. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising and Subscription office at 27 Pearl Street, New York City. Application for entry in the Post Office at New York is pending. Subscription three dollars the year domestic; three dollars fifty cents, foreign.

"MOTORSHIP" for July, 1924. Vol. IX, No. 7. A monthly journal published by MOTORSHIP, at 27 Pearl Street, New York, N. Y. Entered as second class m July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Additional entry at Brooklyn, N. Y. Subscription, $3.00 per year, domestic; $3.50, for

"MOTORSHIP" for August, 1924. Vol. IX, No. 8. A monthly journal published by MOTORSHIP, at 27 Pearl Street, New York, N. Y. Entered as second class matter July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Subscription, $3.00 per year, domestic; $3.50, foreign.



Vital to ballast pump operation

THE two new lake motorships, **Benson Ford** and **Henry Ford II,** of the Ford Motor Company, are each equipped with a ballast system which is perhaps the most elaborate that has ever been installed on an ore carrier.

The pumping equipment consists of two main centrifugal pumps, having a capacity of 7000 G.P.M. each, and two auxiliary pumps each of 2500 G.P.M. capacity. These pumps are connected to a manifold, provided with suitable connections to the double water bottoms and to the fore peak, and so arranged that any compartment can be filled or emptied at will.

Nash Hytor Vacuum Pumps, motor driven, are depended on for maintaining a vacuum of 18 to 20 in. in the centrifugal pumps and thus for keeping them primed. Under these conditions the suction lift cannot be lost, and efficient unfailing operation is insured at all times.

For this purpose, Nash Hytors are indispensable. In fact, the very maintenance of the necessary vacuum is vital to satisfactory operation. Otherwise, air inleakage would quickly destroy the suction lift and make the ballast pumps inoperative.

Since the total quantity of water ballast, 7390 tons, must be discharged in about two to three hours, continuity in operation is an important consideration. Hence the characteristic unfailing performance of the Nash Hytors cannot be estimated too highly.

Then, too, the use of Nash Hytors permits the installation of the comparatively inexpensive centrifugal units, thereby avoiding the costliness and complications of reciprocating equipment.

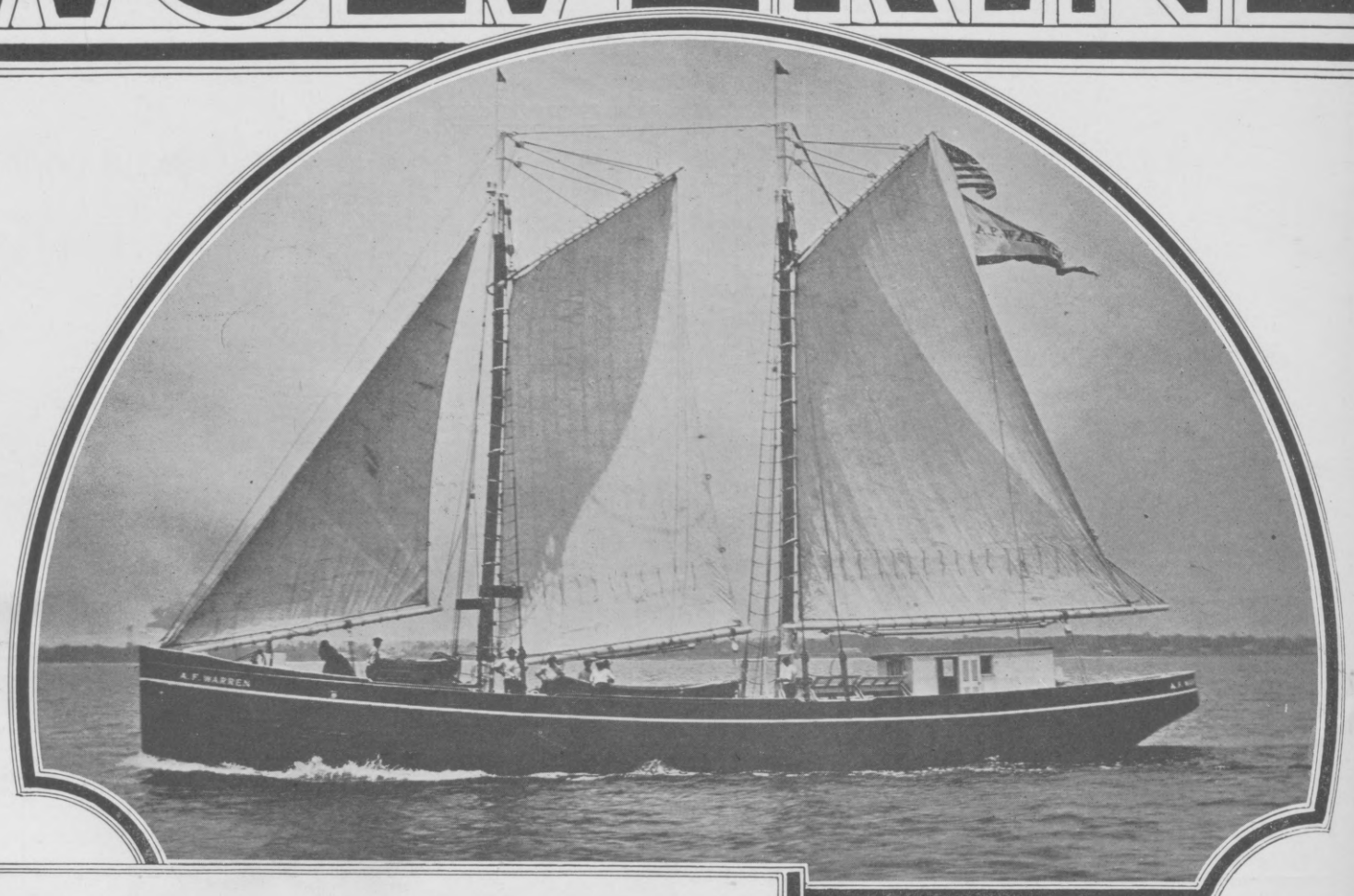
Two motor driven Nash Hytor Air compressors are also installed, and used as direct pressure pumps, discharging sewage from the soil tanks by means of air under 20 lbs. working pressure.

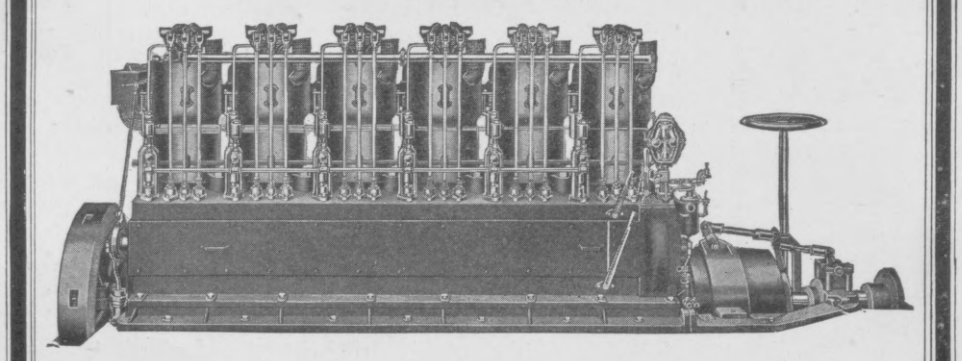
For complete information, write for bulletins

Nash Hytor

NASH ENGINEERING CO SOUTH NORWALK CONN

WOLVERINE





CRUDE OIL MARINE ENGINES

THE Motor Schooner A. F. WARREN, illustrated above, is owned and operated in the Red Snapper Fisheries of the Gulf of Mexico by the Warren Fish Company, Pensacola, Fla.

The A. F. WARREN is a distinctly new type of craft, designed especially for the fishery from suggestions made by Capt. F. W. Wallace, editor of "Fishing Gazette." She is 91′ 5″ x 22′ x 12′, equipped with auxiliary sails.

Powered with a six-cylinder, 150-hp. WOLVERINE Crude Oil Engine, the A. F. WARREN was built to act as a model for the entire Red Snapper Fisheries and the finest of equipment and materials were used throughout.

It was only logical that a WOLVERINE engine should have been selected, as dependability and economy were vital requirements. Send for Catalogue No. 155.

WOLVERINE MOTOR WORKS

24 UNION AVENUE BRIDGEPORT, CONNECTICUT U. S. A.

"MOTORSHIP" for October, 1924. Vol. IX, No. 10. A monthly journal published by MOTORSHIP, at 27 Pearl Street, New York, N. Y. Entered as second class matter July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Subscription, $3.00 per year, domestic; $3.50, foreign. This issue published in two sections of which this is Section I. Price, this issue (including Section II), $1.25.

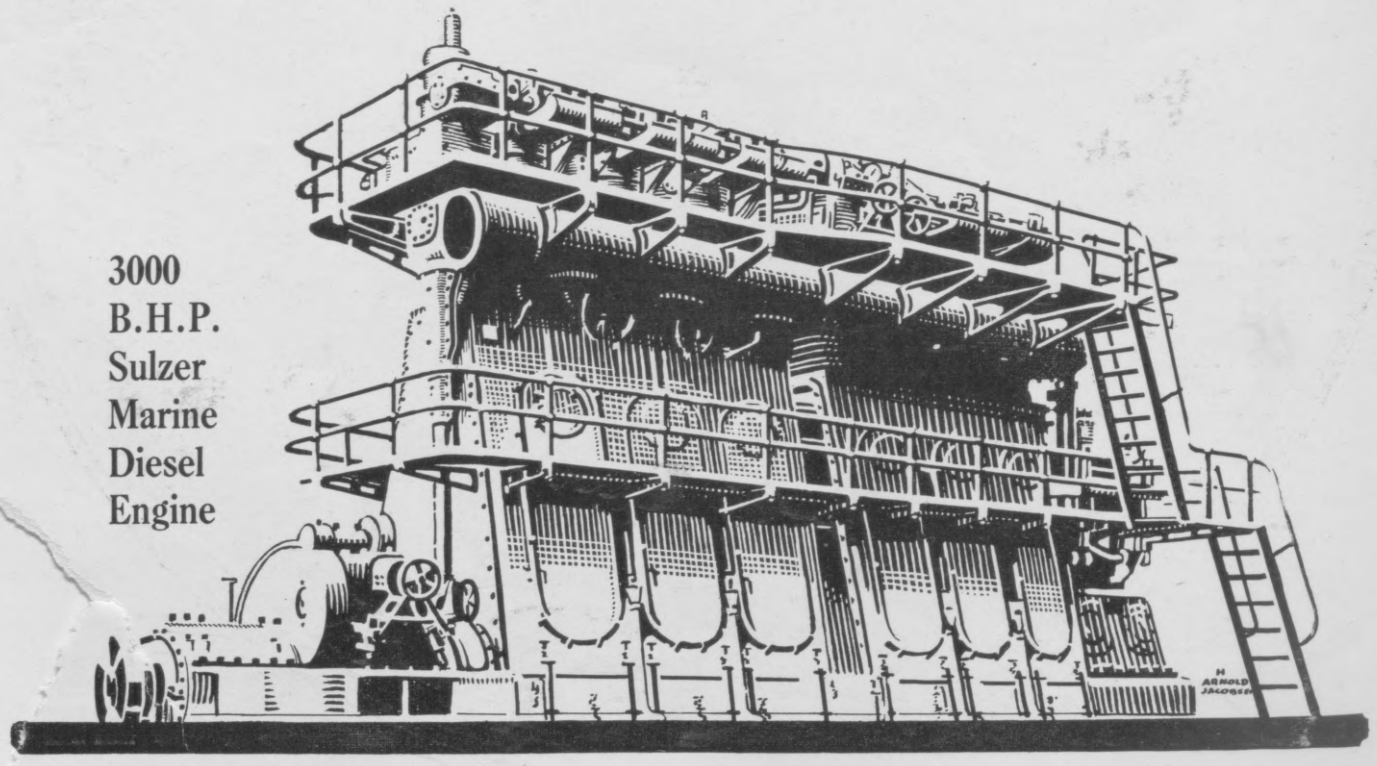
Twenty-six Years Of Our Own Experience in Building

DIESEL ENGINES

In addition to which we have the experience of Sulzer Bros., who are partners in our company. We are prepared to build Diesels of proven Sulzer type in capacities up to 4000 b.h.p. per engine.

BUSCH-SULZER BROS.-DIESEL ENGINE CO.

60 Broadway, New York ST. LOUIS, MO. Rialto Bldg., San Francisco



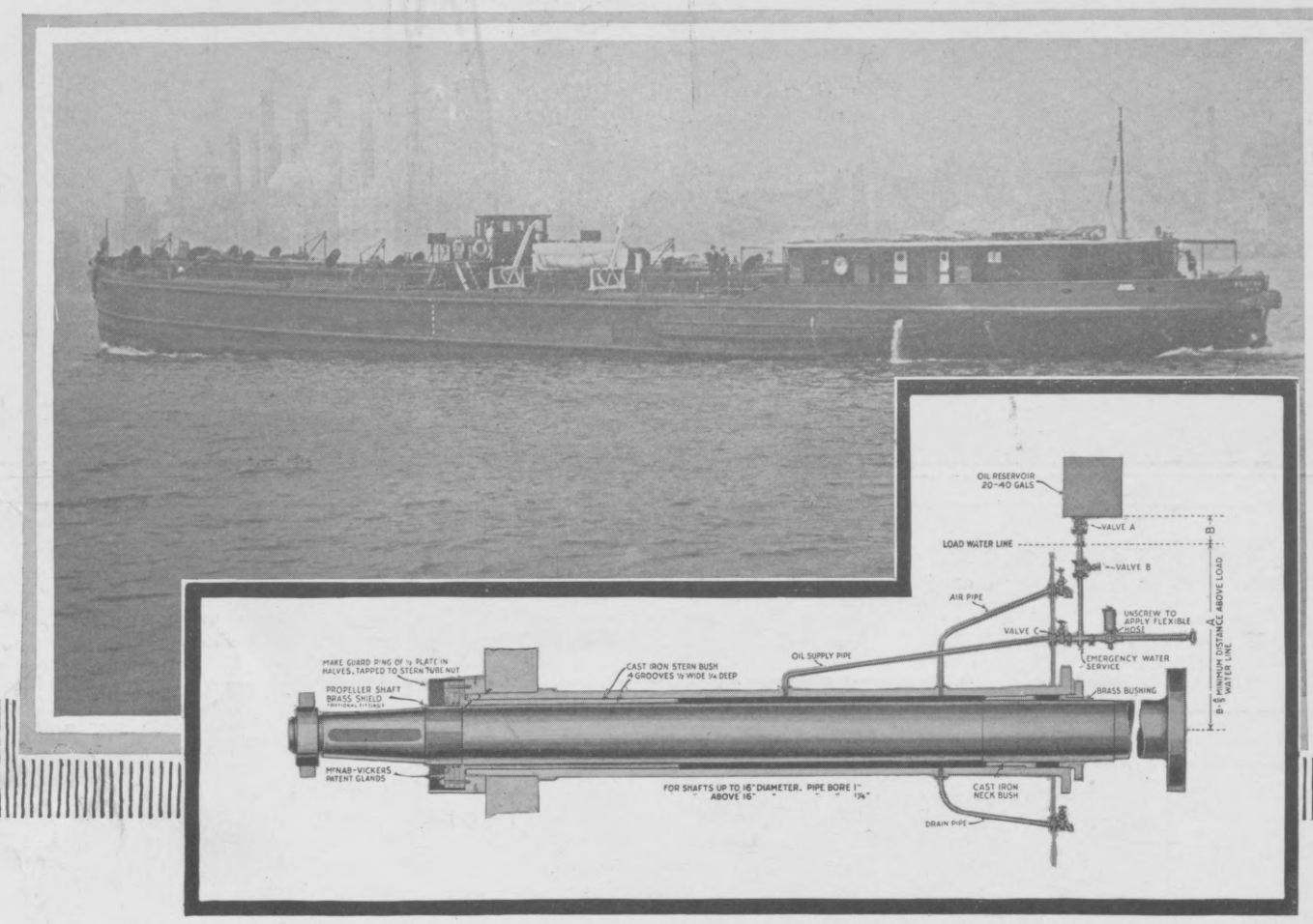
3000
B.H.P.
Sulzer
Marine
Diesel
Engine

McNAB "VISTA" SYSTEM

Of Propeller Shaft Lubrication

PATENTED

Assists Ship Conversion



The Eight Standard Oil Company's Motor Barges, put into commission early this year, are all equipped with McNAB "VISTA" SYSTEM OF PROPELLER SHAFT LUBRICATION (forty-eight shaft fittings). These Barges are 256 feet long and are each powered with a 700 H.P. McIntosh & Seymour Diesel Engine.

WHY INCREASE SHAFT DIAMETER?

In conversion from steam to Diesel propulsion, a shaft of larger diameter can be used in the same stern tube, as a **linerless** steel shaft having an extreme diameter the same as the former over liners, can be readily fitted. This eliminates the expense in stern tube or stern post alteration.

WHY EXPERIMENT?

When many ocean-going ships have been in continuous service for years with **plain steel linerless shafts** protected by the McNab "VISTA" System. This system is approved by Lloyds, British Corporation, and other classification societies, also adopted by the United States, British, French, Italian and other Governments, and by the principal steamship lines throughout the world.

ADVANTAGES OF CORRECT LUBRICATION

A stronger shaft. Prevention of corrosion or rust in stern tube. Friction and vibration reduced. No hidden fractures as under liners. Less cost to install. Time in dry dock frequently reduced. Sand kept out of stern bush and wear minimized. This System can be used in connection with a Cast Iron, White Metal or Lignum Vitae bush. Also with a continuous Liner or two separate Bronze Liners, or a plain Steel Linerless Shaft.

INVESTIGATE OUR CLAIMS

A very interesting booklet has been compiled, giving results obtained from the installation of the McNab "VISTA" System on the larger type of ship; you are cordially invited to write for a copy, which will show you how time and money can be saved by this fitting.

PATENTEES AND MANUFACTURERS

BRIDGEPORT **The McNab Company** **CONN.**

"MOTORSHIP" for November, 1924. Vol. IX, No. 11. A monthly journal published by MOTORSHIP, 27 Pearl Street, New York, N. Y. Entered as second class matter July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Subscription, $3.00 per year, domestic; $3.50, foreign.

There *is* a Remedy for This:

A remedy that will relieve you from the nuisance and expense of frequent valve replacements, valve regrinding and other valve repairs.

Proof: Diesel engines equipped with "Nichrome" Valves, running more than 30,000 miles with no carbon on valves—free from pitting, scaling, corrosion, distortion or annealing. And still going. Burning low grade fuels, too.

And now that "Nichrome" valves have conclusively demonstrated that frequent valve repairs and replacements are no longer a "necessary evil," that "Nichrome" Valves have conquered carbon, pitting, scaling, corrosion, etc., you need no longer tolerate them, nor the labor, expense and loss of power that they cause.

Why not get complete data—NOW. Write. No obligations.

The efficiency and unparalleled economy of "Nichrome" have been proven in many different uses, in some of which the operating conditions are more severe than those to which Diesel engine valves are subjected.

"Nichrome" is the Driver-Harris Trade Mark, applying to special alloys used in high temperatures, in oxidizing atmospheres, in processes involving certain chemical reactions, etc.

DRIVER-HARRIS COMPANY

HARRISON, N. J.

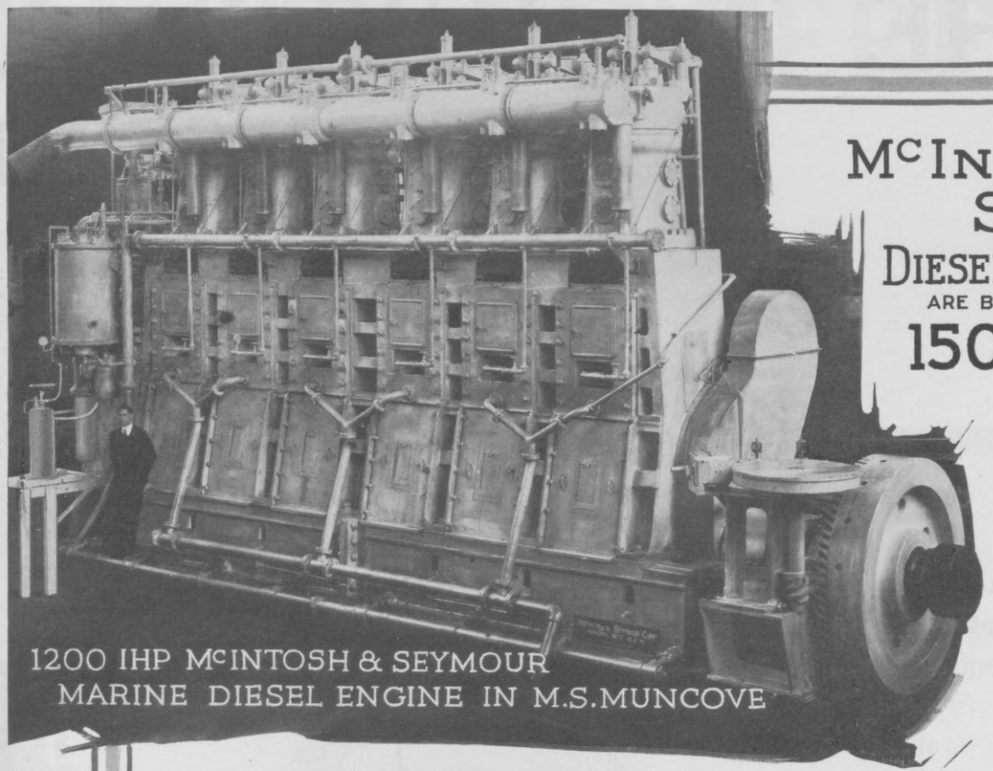
Branch Offices:—Chicago and Detroit; British Driver-Harris Co., Manchester, England; Etablissements Driver-Harris, Gassicourt, France.

TRADE MARK REG. U.S. PAT. OFF.

Nichrome

The DRIVER-HARRIS VALVES

"MOTORSHIP" for December, 1924. Vol. IX, No. 12. A monthly journal published by MOTORSHIP, 27 Pearl Street, New York, N. Y. Entered as second class matter July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Subscription, $3.00 per year, domestic; $3.50, foreign.



1200 IHP McINTOSH & SEYMOUR
MARINE DIESEL ENGINE IN M.S.MUNCOVE

McINTOSH & SEYMOUR DIESEL OIL ENGINES

ARE BUILT IN SIZES FROM

150 TO 8000

INDICATED H.P.

SHIP OWNERS & OPERATORS

PLEASE STUDY THIS TABLE

	COAL FIRED STEAM VESSEL	CONVERTED TO MOTORSHIP WITH STEAM AUXILIARIES	CONVERTED TO MOTORSHIP WITH DIESEL ELECTRIC AUXILIARIES
Deadweight Tons	4125	4125	4125
Average Speed (Knots) . .	8·5	8	8
Average Fuel Per Day (Tons)	28	8	4½
Ton/Miles of Cargo per Dollar Fuel Cost	**4300**	**9300**	**16,500**

The above are actual results compiled from operating data of Sister Shipping Board Ships now operated by a prominent American shipping company.
THE MOTORSHIPS were fitted with

McINTOSH & SEYMOUR DIESEL OIL ENGINES FOR MARINE SERVICE

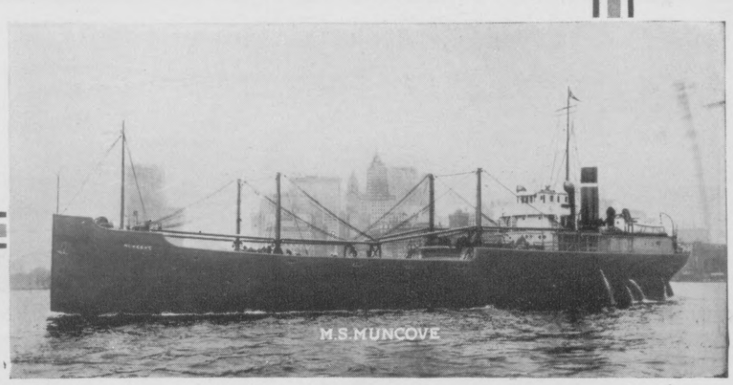
FULL PARTICULARS CAN BE OBTAINED FROM

McINTOSH & SEYMOUR CORPN

AUBURN, NEW YORK,

SALES OFFICES

530 HUMBLE BLDG. HOUSTON, TEXAS
815 SHELDON BLDG. SAN FRANCISCO, CAL.
412 BISBEE BLDG JACKSONVILLE, FLA.
901 A&R BLDG. KANSAS CITY, MO.
1016 BALTIMORE AVE.
149 BROADWAY NEW YORK CITY



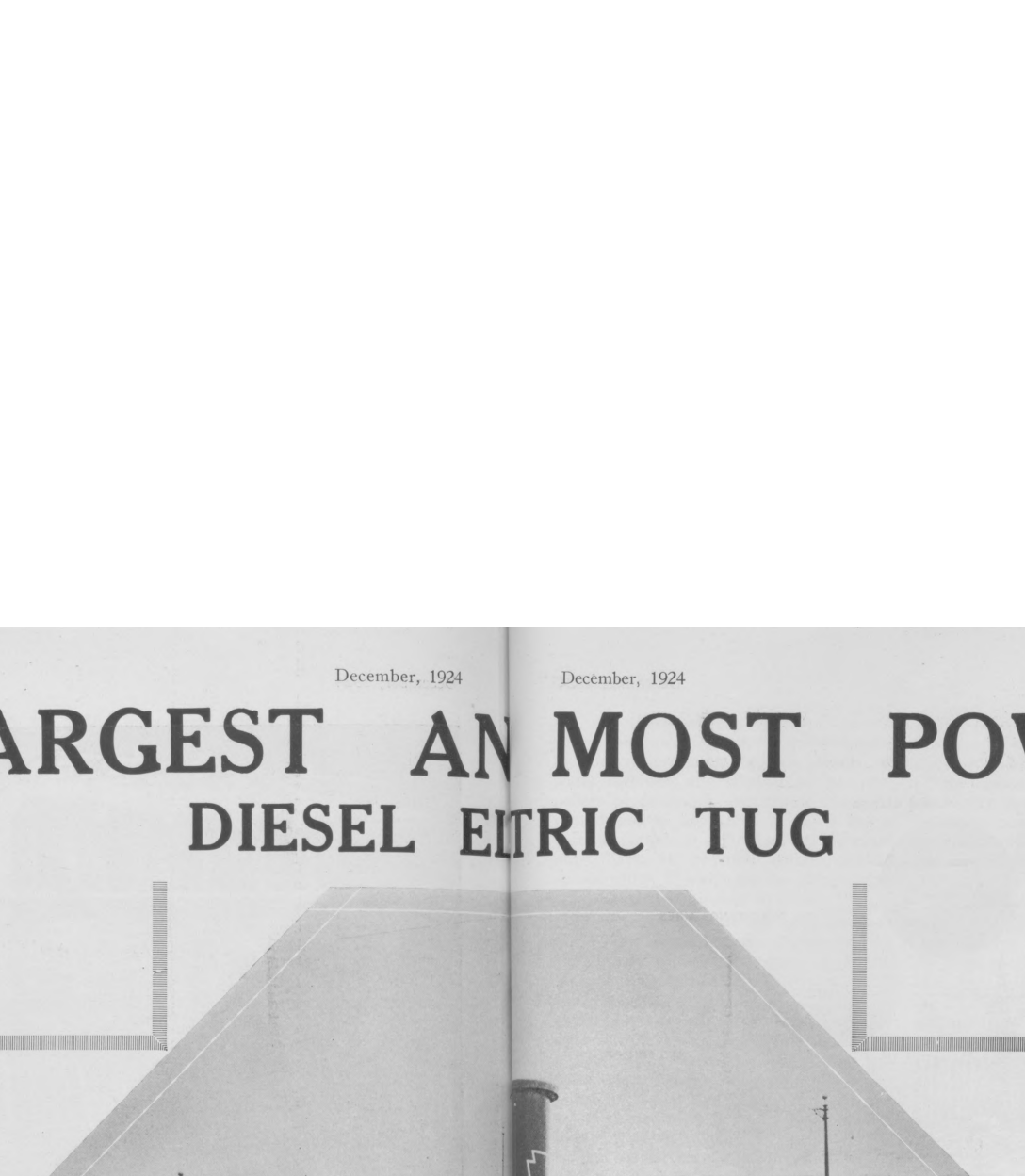
M.S.MUNCOVE

THE LARGEST AND MOST POWERFUL DIESEL ELECTRIC TUG

PENNSYLVANIA Railroad Tug No. 16 enjoys the distinction of being the first, largest, and most powerful Diesel-electric tug ever built.

P. R. R. No. 16 is 105 feet in length, has a beam of 24 feet and a draft of 12 feet. The hull and superstructure were built by the Staten Island Shipbuilding Co., and the machinery installation was made at the Hoboken Marine Yards of the Pennsylvania Railroad.

The power plant consists of two six-cylinder, four-cycle, 13¼″ x 18″ Winton Diesel engines, each direct connected to a 235 K.W. 250-volt Westinghouse Generator. Operating at 275 R.P.M., each engine delivers 375 B.H.P., so that a combined output of 750 effective horsepower is available to meet the requirements for main and auxiliary power.



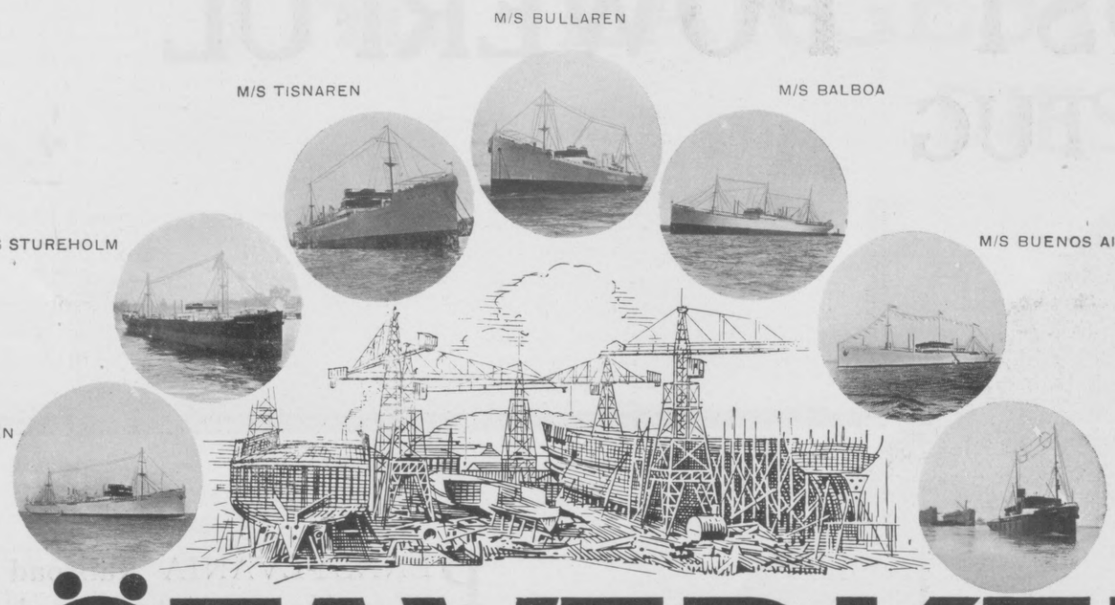
PENNSYLVANIA Railroad Tug No. 16 typifies the latest word in Diesel-Electric engineering. The engine room of this highly efficient tug is clean, compact, and clear of auxiliary machinery.

The two big Winton Diesel engines do their work quietly and dependably, and the entire power plant is under direct control of the man on the bridge. Instant response of the tug to his demands simplifies and speeds up its work in a degree surprising to experienced tug owners and operators.

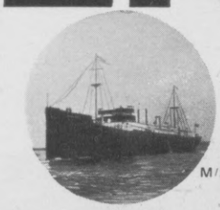
Winton engineers, the men who built this largest and most powerful Diesel-Electric tug power plant, welcome an opportunity to discuss with you the advantages of this type of propulsion. Winton Diesel Engines in sizes from 100 to 500 H.P. are ideal for Electric Drive installations. Write for complete details.

WINTON ENGINE WORKS, CLEVELAND, OHIO, U. S. A.

NEW YORK—A. G. Griese, Inc., 30 Church Street
LOS ANGELES—E. G. Bryant, 201 F. W. Braun Building
NEW ORLEANS, LA.—[illegible]pany
WASHINGTON—R. L. [illegible]portation Building
SEATTLE—H. W. Starrett, Sunset Engine Company
BOSTON—Walter H. Moreton Corp., 780 Commonwealth Avenue

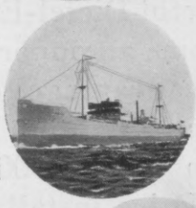


GÖTAVERKEN

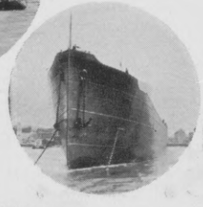


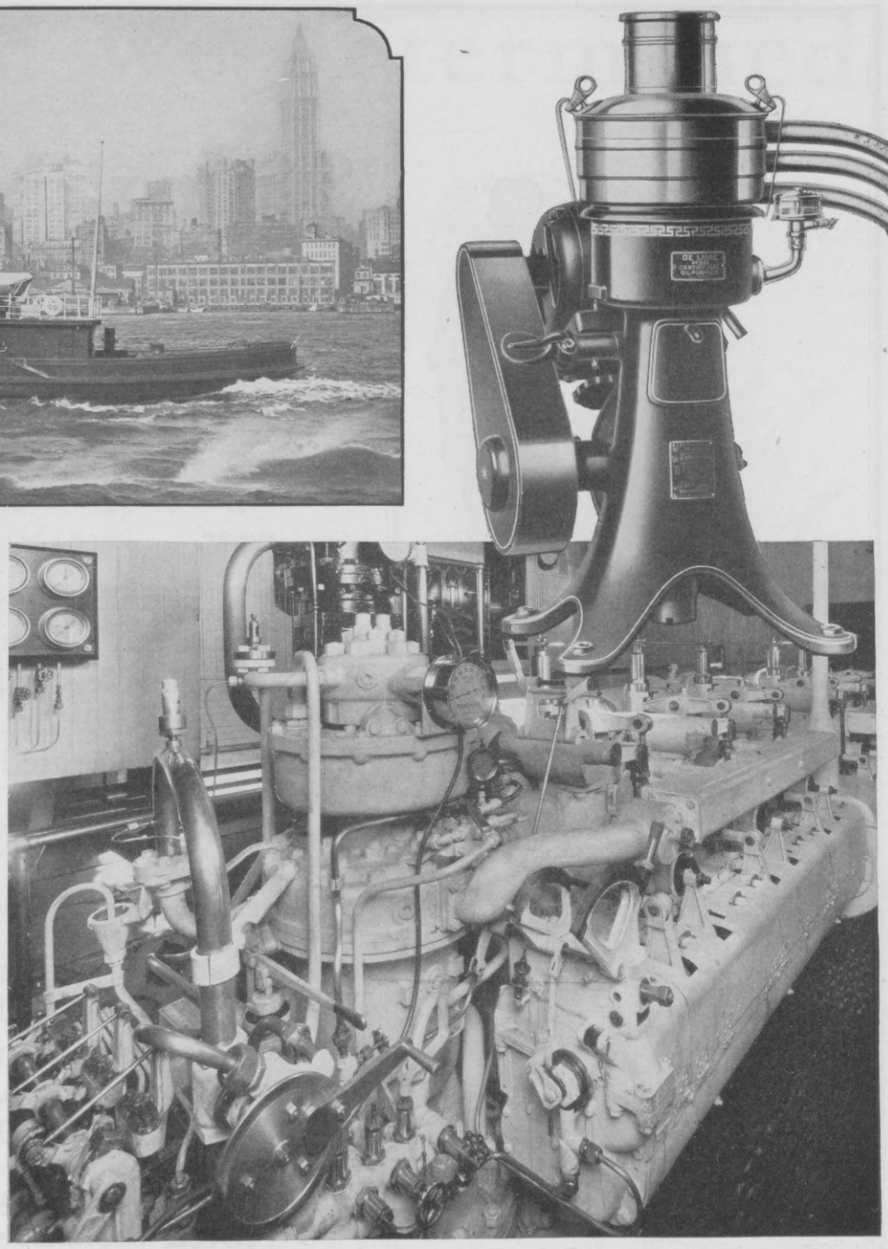
SHIPBUILDERS, SHIPREPAIRERS
BUILDERS OF DIESELMOTORS
MAIN LICENSEES FOR SWEDEN OF THE B & W-MOTORS

LARGEST FLOATING DRY DOCK IN SCANDINAVIA.



A. B. GÖTAVERKEN
GÖTEBORG · SWEDEN
POSTAL & TEL. ADDRESS:
„GÖTAVERKEN"
GOTHENBURG





A De Laval Oil Purifier protects the engine of the largest Diesel-driven tug

The tugboat "Jumbo," built by the New London Ship & Engine Company and operated by the Transmarine Corporation, of New York, is said to be the highest-powered Diesel-driven vessel of its kind in America. Her power plant, consisting of a 600-h.p. Nelseco Diesel engine, is proteced at all times with clean lubricating oil furnished by a De Laval Oil Purifier. This is the final touch in building a vessel to operate at minimum cost and with maximum reliability.

The Purifier is keeping the lubricating oil free from water and sludge so that wear on bearings is minimized and all the trouble which follows the use of dirty oil is eliminated. In addition to this it makes it entirely safe to keep the same oil in service indefinitely, thereby effecting a considerable reduction in the cost of lubrication.

De Laval Oil Purifiers remove sludge and water from lubricating oil by a centrifugal force several thousand times greater than the force of gravity—and this force is made tremendously more effective by the De Laval system of strata distribution. There is no substitute for De Laval centrifugal purification.

Write for Bulletin No. 105, which gives full details

The De Laval Separator Company **New York, Chicago, San Francisco**

The De Laval Chadburn Co., Ltd., Wellington House, Buckingham Gate, London S. W. 1, England

And when we determined to build Diesels

We investigated every Diesel. For years, and at a great cost, we went into the subject thoroughly.

Out of it all there came to us this one outstanding conviction: The best Diesel in the world is made at Augsburg, Bavaria, by M. A. N. who made the first Diesel, the largest Diesel and a great aggregate of Diesel horse-power.

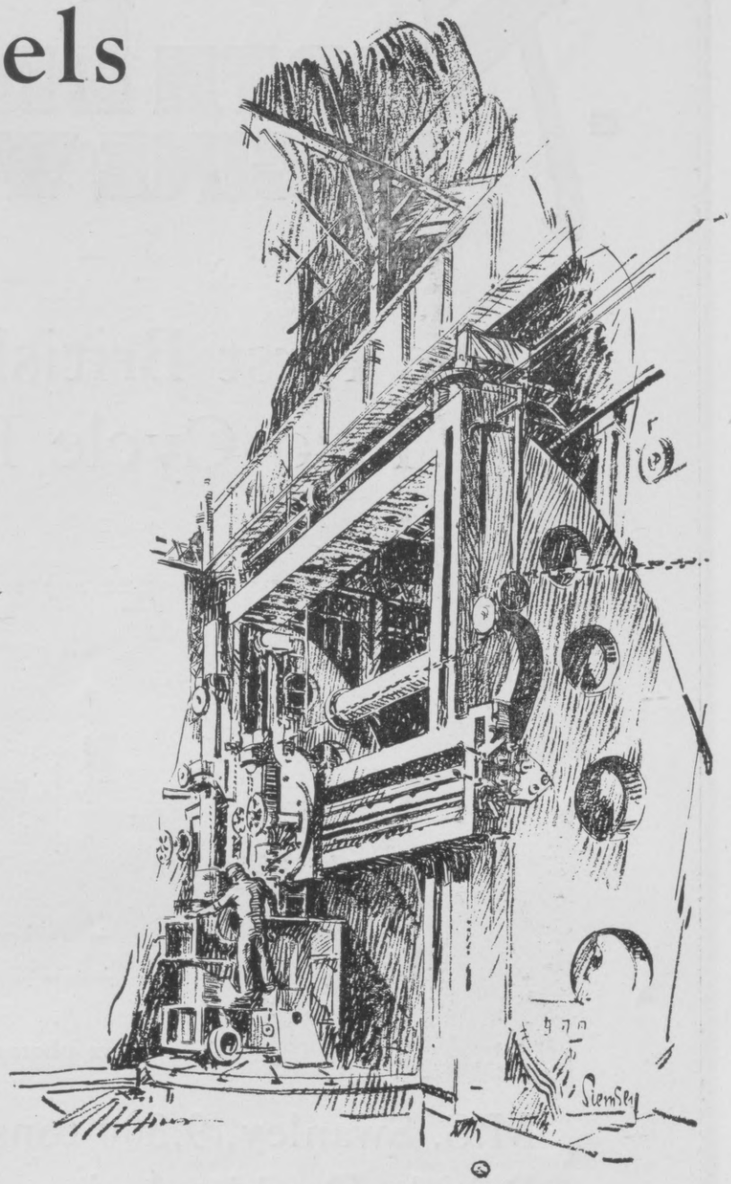
We secured the M. A. N. license and with it all the wealth of Diesel knowledge they had, all drawings and designs and information—everything necessary to build M. A. N. Diesels.

With this license and all it means; with our foundries, engine shops and big, modern tools—with Hamilton engineers and men accustomed to handling the biggest jobs as part of a day's work, we offer to American industry and shipping the Hamilton M. A. N. Diesel with full confidence.

Hamilton engineers and men have built half-a-million horse-power of steam marine engines. In one year we built more steam marine horse-power than any builder or shipyard in the world. This in itself shows we are able to build any type of large engine.

We would be glad to furnish specific detailed information to you if you are interested. Write to our Engineering Department.

THE HOOVEN, OWENS, RENTSCHLER CO.
ENGINE BUILDERS SINCE 1845
HAMILTON, OHIO

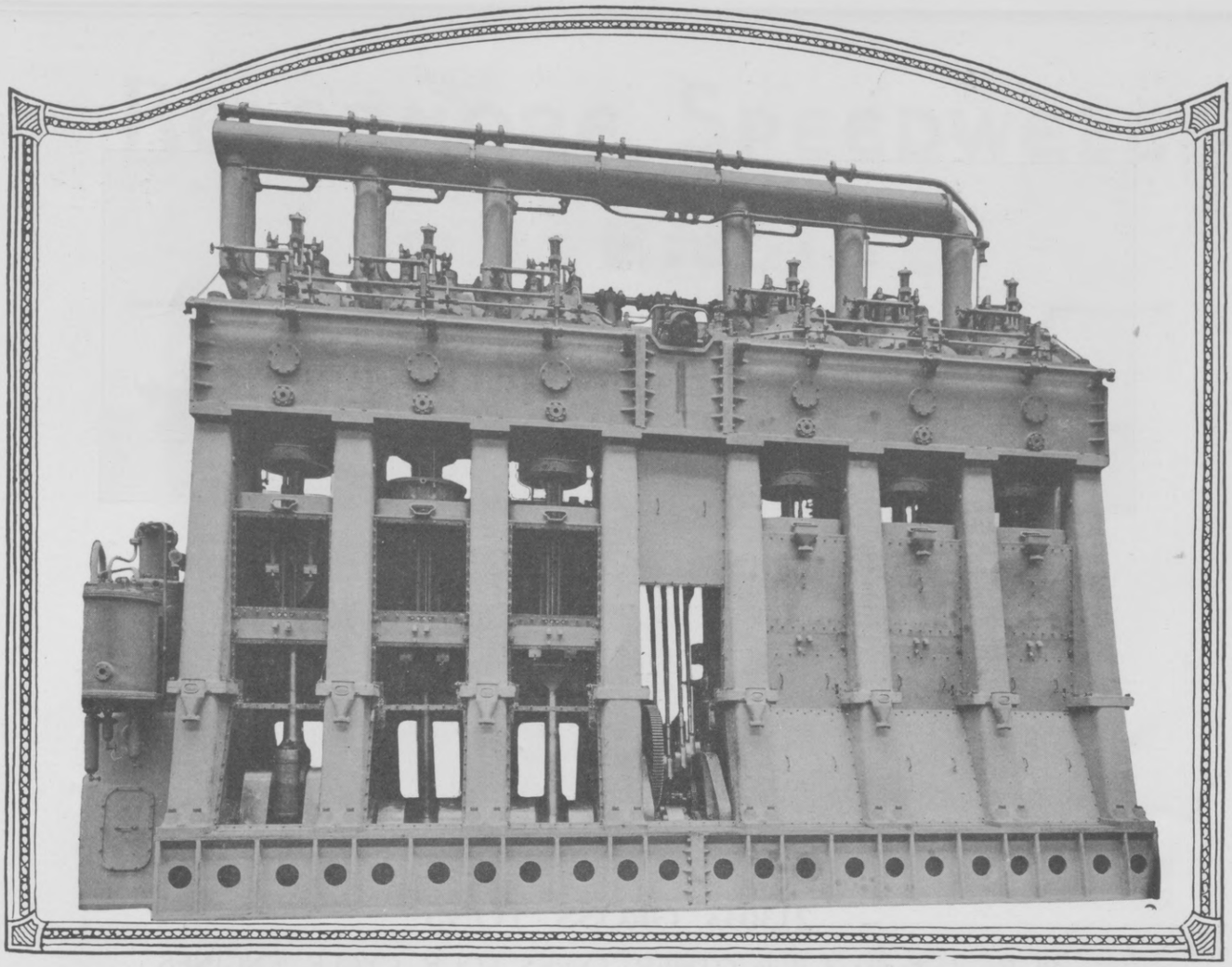


THIS BORING MILL GIVES SOME IDEA of the large tool equipment in the Hamilton Engine Shops. There is no job too big for our tools and men.

Hamilton Products:

CORLISS ENGINES
POPPET VALVE ENGINES
UNIFLOW ENGINES
GAS ENGINES
MARINE ENGINES
HAMILTON, M. A. N. DIESEL ENGINES
SUGAR MILLS
HEAVY MACHINERY
PLATE GLASS MACHINERY
IRON AND SEMI-STEEL CASTIN
HAMILTON PRESSES

HAMILTON M.A.N. Diesel

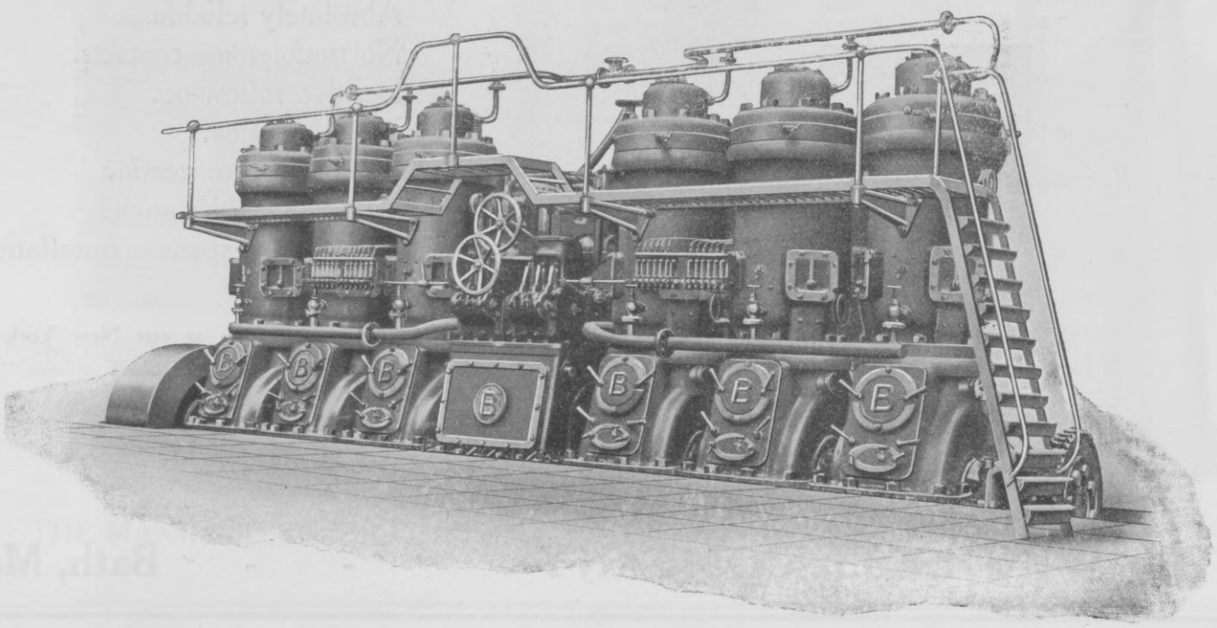


4 Cycle 6 Cylinder
Diesel Engine
of the Motorship "Ashbee"
2000 I.H.P.

This vessel of 5500 tons D.W. on her first voyage of 8740 miles averaged 10.22 knots per hour on 6.92 tons of fuel oil per day for all purposes.

NEW YORK
SHIPBUILDING CORPORATION
Camden, New Jersey

BEARDMORE SPEEDWELL (NEW TYPE) OIL ENGINE



This new type Beardmore Speedwell Oil Engine approximates in efficiency the Diesel Engine, but the design embodies the simplicity of the so-called Semi-Diesel type with greater accessibility and robustness (features which will be readily appreciated by the marine engineer). This new type oil engine is produced at a low first cost, and can be run by ordinary labour. A special combustion chamber permits the new type Beardmore Speedwell Oil Engine to run on even cheaper fuel oil than is used for the ordinary Diesel engine. It is easy to start and manœuvre, no lamps for preliminary heating are required, i.e. (cold starting).

RUNNING COSTS

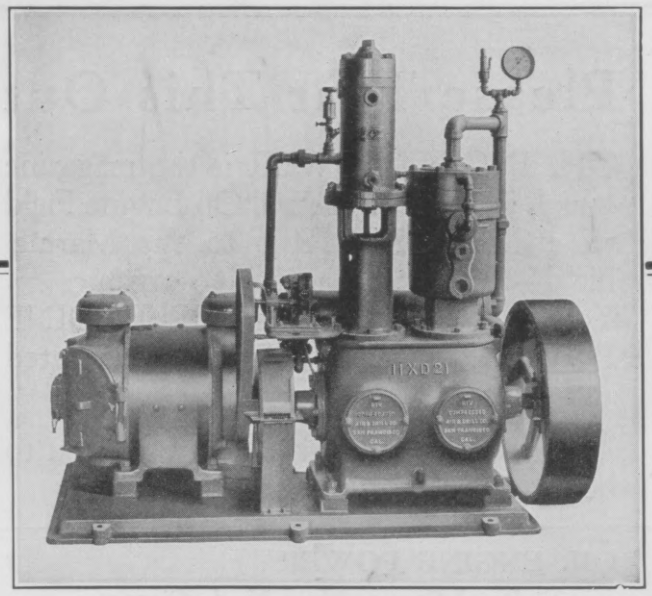
Some idea of the comparative cost of running the new type Beardmore Speedwell Oil Engine is gained from the following:—With fuel oil at £3 per ton, running costs (including lubricating oil) of the Beardmore Speedwell Oil Engine works out at under .19 pence per B. H. P. hour. With coal at £1 10s. per ton, the running costs (including lubricating oil) of an ordinary triple expansion steam set works out at about .385 pence per B. H. P. hour. This shows a saving in favour of the Oil Engine of 50 per cent.

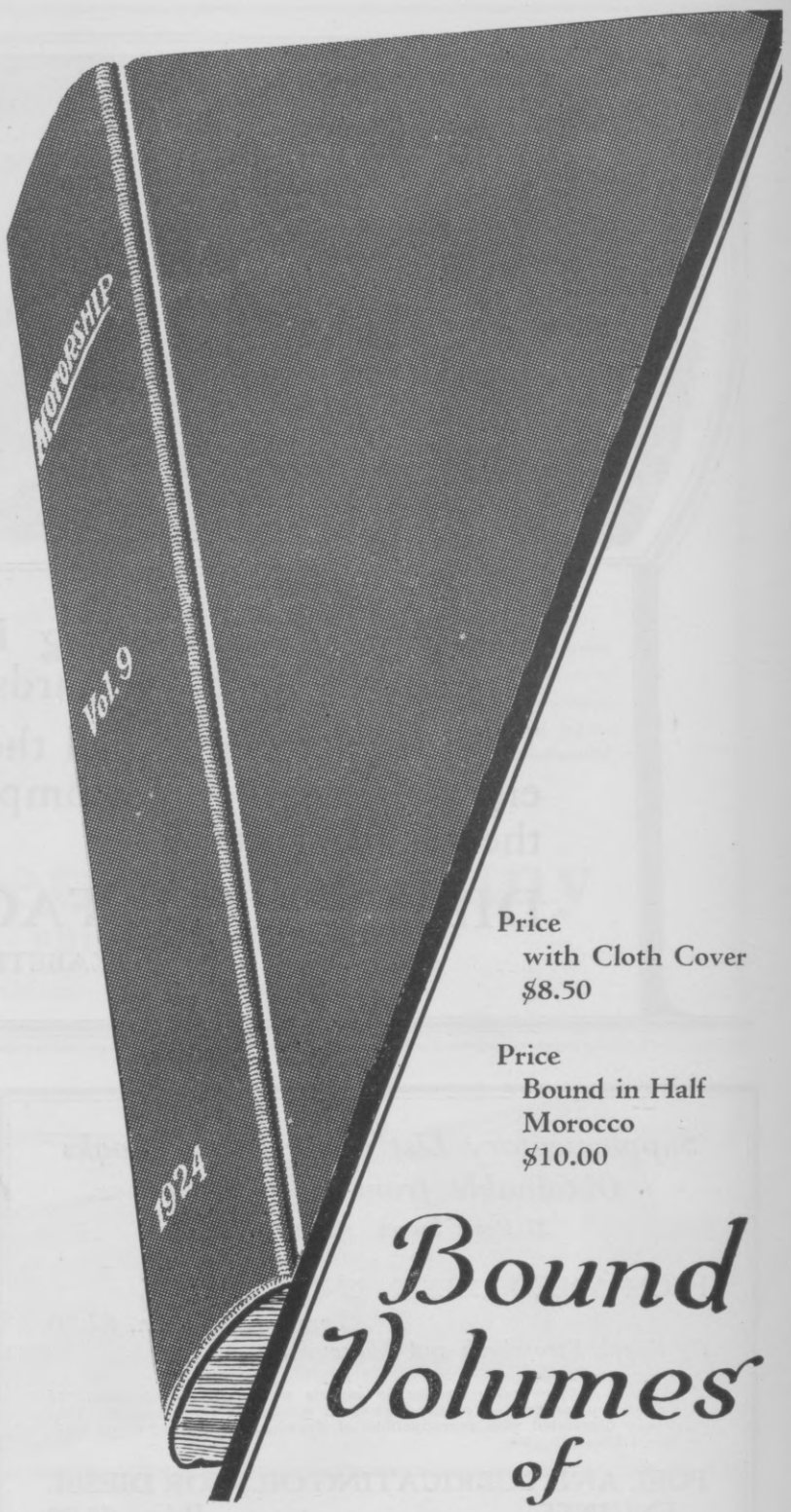
WILLIAM BEARDMORE AND COMPANY LIMITED

Works: Coatbridge, Scotland.
Telegrams—Coatbridge.

London Office: 38, Victoria St., S. W. 1
Telephone—360 Victoria. Telegrams—"Beardmore, Sowest, London."

All inquiries to be sent to Speedwell Works, Coatbridge





The Significance of the

WORTHINGTON
DOUBLE-ACTING TWO-CYCLE
OIL ENGINE
(Diesel Type)

SEE NEXT PAGE

STEAM PLANT
2900 hp.—80 r.p.m.

LENGTH of machinery space	63 FEET
WEIGHT of machinery excluding piping	510 TONS
B.t.u. per b.hp. per hr.	21,000

DIESEL ENGINE PLANT
4-CYCLE SINGLE-ACTING
2900 hp.—95 r.p.m.

LENGTH of machinery space	66 FEET
WEIGHT of machinery excluding piping	710 TONS
B.t.u. per b.hp. per hr.	7,500

WORTHINGTON
OIL ENGINE PLANT
DOUBLE-ACTING TWO-CYCLE OIL ENGINE (DIESEL TYPE)
2900 hp.—95 r.p.m.

LENGTH of machinery space	42 FEET
WEIGHT of machinery excluding piping	400 TONS
B.t.u. per b.hp. per hr.	7,500

Combining the **BEST** *of each*

WORTHINGTON
DOUBLE-ACTING TWO-CYCLE
OIL ENGINE
(Diesel Type)
WORTHINGTON

WORTHINGTON PUMP AND MACHINERY CORPORATION
115 BROADWAY, NEW YORK, U. S. A.

Please send me your bulletin on the Worthington Double-acting Two-cycle Oil Engine Diesel type.

39-0110-1

Name..... *Company*.....

Title..... *Address*.....

Cory Service

"The World's Largest Manufacturers of Marine Signaling, Communicating and Lighting Equipment."

Exclusive Marine Distributors and Installation Engineers of Foamite Fire Extinguishing Systems.

Here are Five Ways to Protect a Ship From Fire —the S. S. America Chose the First

1. Cory Aero Fire Detecting and Alarm System

As shown in the circle in the above illustration, up between the beam ceiling panels in the Smoking Room aboard the S. S. AMERICA is a round disc, so small it is seldom seen. This disc is part of the Cory-Aero System operating on the most sensitive of known principles — expanding air. So soon as a fire starts, the rise in temperature expands the air in the disc spirals where it backs down a metal tube against flexible diaphragms, sounding the annunciator gong and indicating the location. Complete protection is afforded abroad the S. S. AMERICA by this infallible system.

Another ship might be protected with the

2. Cory Electro-Pneumatic System

actuated by expanding air in a metal dome, causing the electrical contacts to be closed—or the

3. Cory Fusible Fire Alarm System

the circuit of which is bridged by the melting of soft solder at any pre-determined temperature. Another type is the

4. Mercurial Thermostat System

which is United States Navy Standard. Here the alarm is sounded by the bridging of electrical contacts in the mercury column.

—and finally the

5. Bi-Metal Fire Alarm System

comprising two arc springs made of two dissimilar metals. A rise in temperature causes these springs to expand and touch, thereby closing the circuit which sounds an alarm.

For a period of 30 years, Cory has designed and installed fire alarm equipment for all marine fire protection needs. These five systems described conform to all Classification Societies' specifications. Write Cory for details of fire protection service.

CHAS. CORY & SON INC.

New York: 183 Varick Street Philadelphia: The Bourse San Francisco: 11 Mission Street New Orleans: 826 Baronne Street
Seattle: 515 Hoge Building Boston: 110 High Street

CHARLES E. JOHNSON, PRESIDENT
CARL P. DAMM, VICE PRESIDENT
PAUL R. BEARDSLEY, SECRETARY & TREASURER

THE Piston RING COMPANY

Muskegon, Michigan

The close business relations which have existed between this company and the No-Leak-O Piston Ring Co. for eleven years are well known throughout the industry and the fact that we are the manufacturers of the famous No-Leak-O piston rings has been established for some time.

Beyond the actual manufacture of the rings, the two organizations functioned on an entirely individual basis, with the No-Leak-O Co. concentrating all its efforts on the grooved ring field and the Piston Ring Co. on the plain ring field.

The agreement under which we have manufactured the No-Leak-O Piston Ring has expired and being cognizant of the growing demand for oil rings, negotiations were begun several months ago looking toward the consolidation of the two companies, with the natural resulting benefits and economies inevitable in such a consolidation.

It gives us much pleasure to announce that this consolidation has been accomplished and will be in effect November 1st, 1924.

Mr. L. F. Iverson, Manager of Service Division of the Piston Ring Co., will continue in that position in which he will have general supervision of the Service Branch of the business but will devote his time principally to the Quality Plain Ring department, while the No-Leak-O and Sealdrain rings will be combined in a department with Quality Drainoil rings under the management of Mr. L. G. Matthews, Treasurer of the No-Leak-O Co., who will be assisted by Mr. John E. Norwood, Jr., son of the inventor of No-Leak-O piston rings.

This consolidation provides not only the perfect piston ring line but insures also the continued effort and attention of men entirely familiar with both the plain and oil control rings, and who are thoroughly acquainted with the requirements of the trade.

You will appreciate that this combination will effect economies in various ways, the results of which we propose to pass on to you as is possible from time to time.

We solicit your increasing patronage and pledge you the same co-operation that has been such a factor in building up both companies.

Yours very truly,

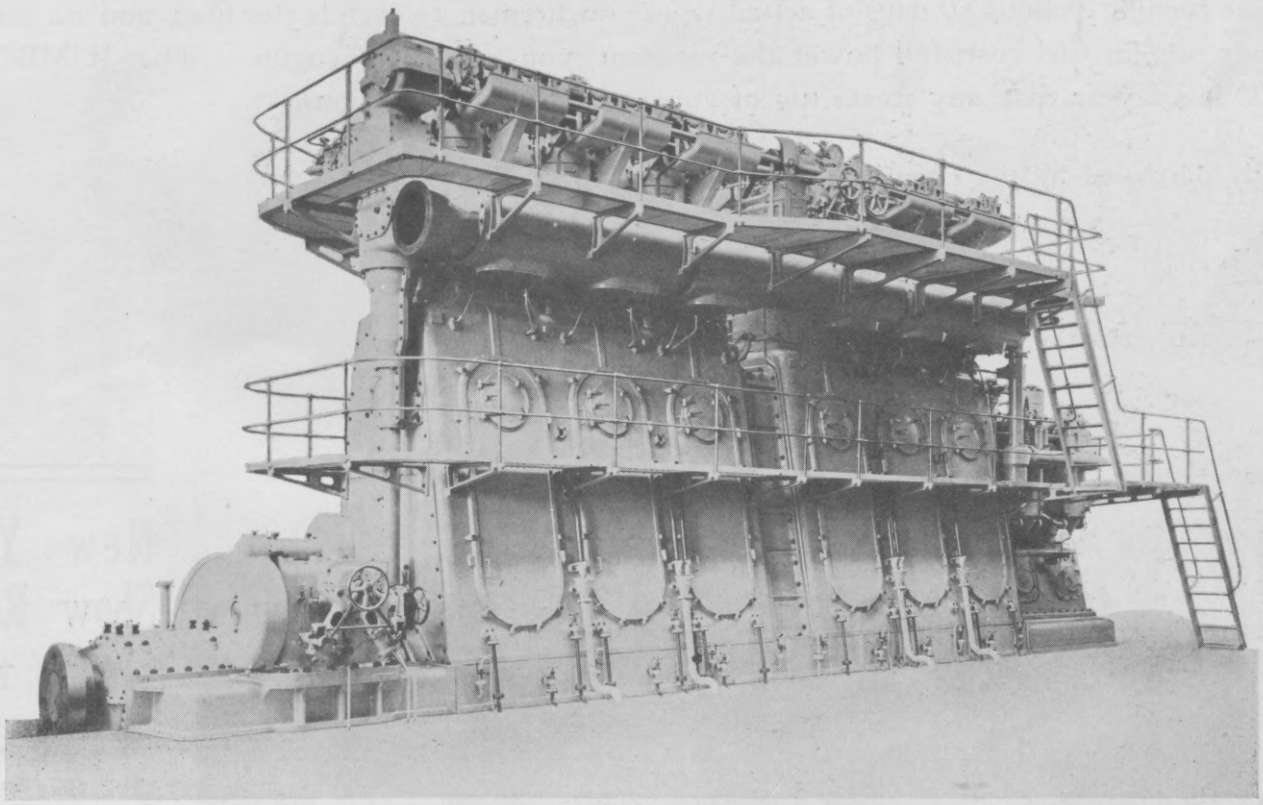
THE PISTON RING COMPANY.

By Paul R. Beardsley

Sec. & Treas.

A Notable List of European Shipbuilders Licensed to Build Sulzer Marine Diesels

F. et C. de la Mediterranee, Havre, France.
Wm. Denny & Bros., Ltd., Dumbarton, Scotland.
Sir W. G. Armstrong, Whitworth & Co., Ltd., Newcastle-on-Tyne, England.
Alexander Stephens & Sons, Ltd., Glasgow, Scotland.
Wallsend Slipway & Engr'g Co., Ltd., Wallsend-on-Tyne, England.
The Koninklijke Maatschappij "De Schelde," Flushing, Holland.
The Northumberland Shipbuilding Co., Ltd., London, England.
Fairfield Shipbuilding & Engineering Co., Ltd., Glasgow, Scotland.
Workman, Clark & Co., Ltd., Belfast, Ireland.
Thunes Mek Vaerksted, Christiana, Norway.
Howaldstwerke, Kiel, Germany.
Soc. Am. des Atejers et Chantiero de la Loire, St. Denis sur Siene, France.



3000 B.H.P. Sulzer Marine Diesel Engine

The above concerns chose the Sulzer engine of proven design with the whole European field to select from. No other type of engine has been adopted by any such number of reputable companies. Sulzer Bros. are partners in our Company, and we build Diesels of the same type for American ships.

BUSCH-SULZER BROS.-DIESEL ENGINE CO.

60 BROADWAY, NEW YORK ST. LOUIS, MO. RIALTO BLDG., SAN FRANCISCO

Nelseco

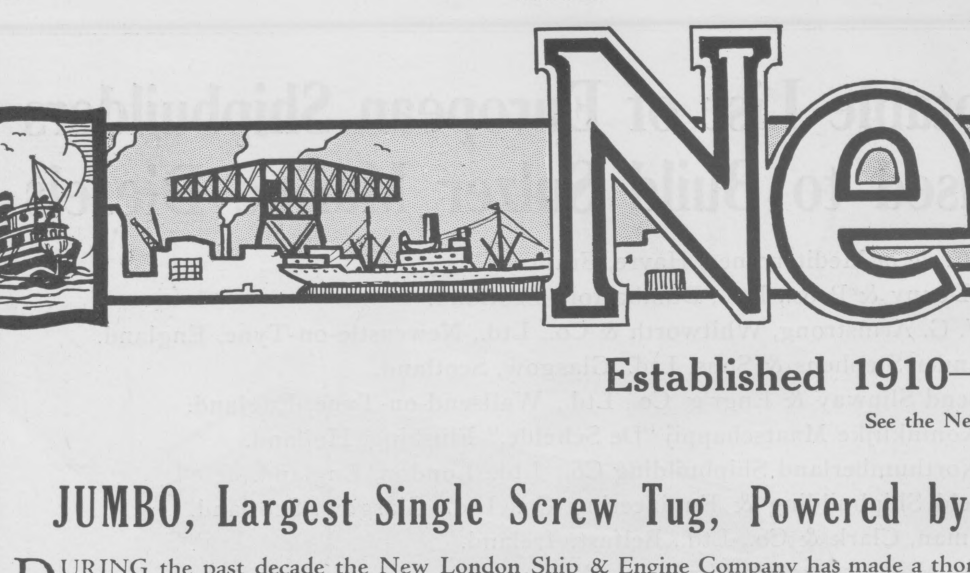
Established 1910—DIESEL ENGINES 230,000 Horsepower

See the Nelseco Engine at Port —Our New York Salesroom

JUMBO, Largest Single Screw Tug, Powered by Nelseco

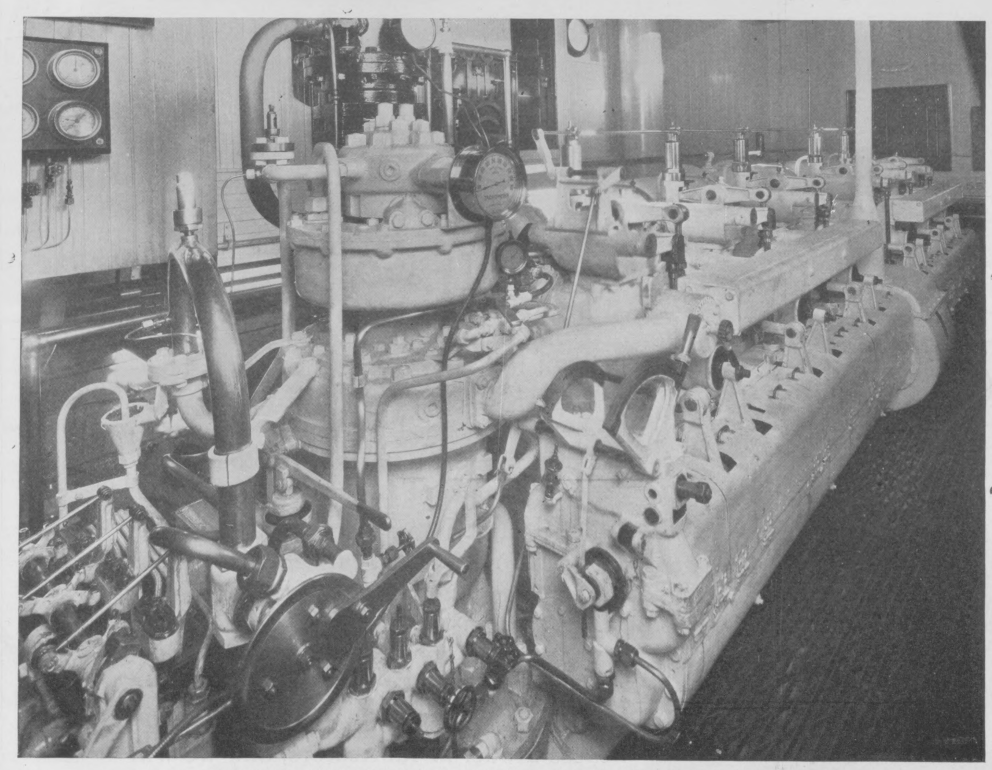
DURING the past decade the New London Ship & Engine Company has made a thorough study of the power problem of harbor and river craft. Today, the largest single screw Diesel towboat is driven by a Nelseco 600 B.H.P. direct reversible engine. The JUMBO is one of the most powerful, and yet most economical towboats in New York Harbor. What steam tug can offer these features? A cruising radius of 7000 miles on one fuelling—about 60 days of actual work; no firemen to watch the fires, and no stand-by losses; one-fifth your present fuel cost; full power the moment you start the engine. The JUMBO will operate for $20,000 less a year than any steam tug of equal power and dimensions.

Recently purchased by the Cornell Steamboat Company of New York



JUMBO, New 100-foot Motor Tug now in Service in New York Harbor

New York Show Rooms "PORT ELCO"
247 Park Ave.
and
107 East 46th St.



ENGINE ROOM OF "JUMBO" SHOWING 600 B.H.P. NELSECO DIESEL ENGINE

Demonstrations made on appointment in New York Harbor. Call Rector 0020

Write for Latest Bulletins

THE NEW LONDON SHIP & ENGINE CO.
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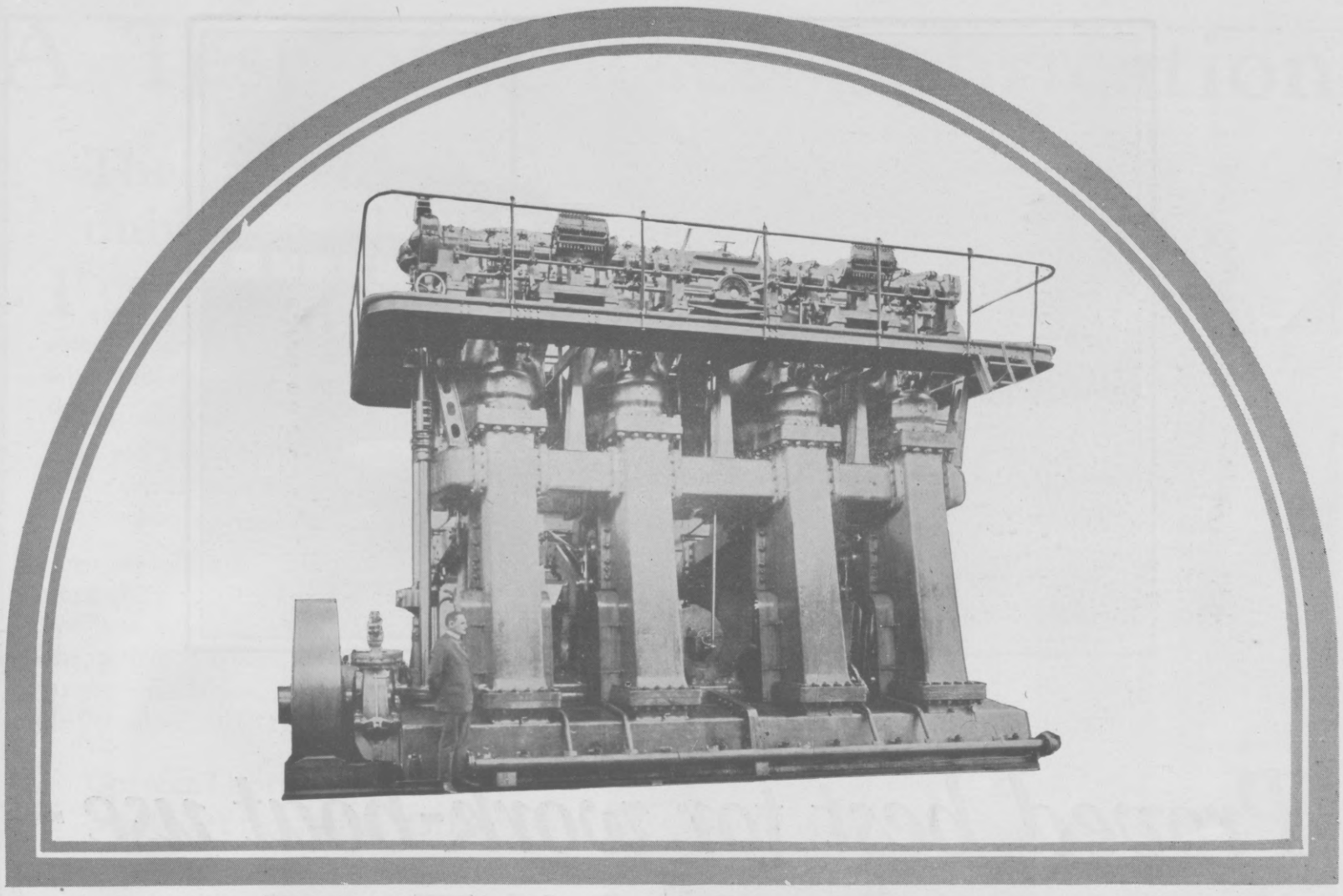

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Nobel's 25 years' oil-engine experience includes passenger, freighter, tanker, tug, yacht, gunboat, revenue cruiser, submarine, pipeline, flour-mill, pumping and central-station installations.

Our experience is available to some reputable American Company.

High, Medium and Low Powers

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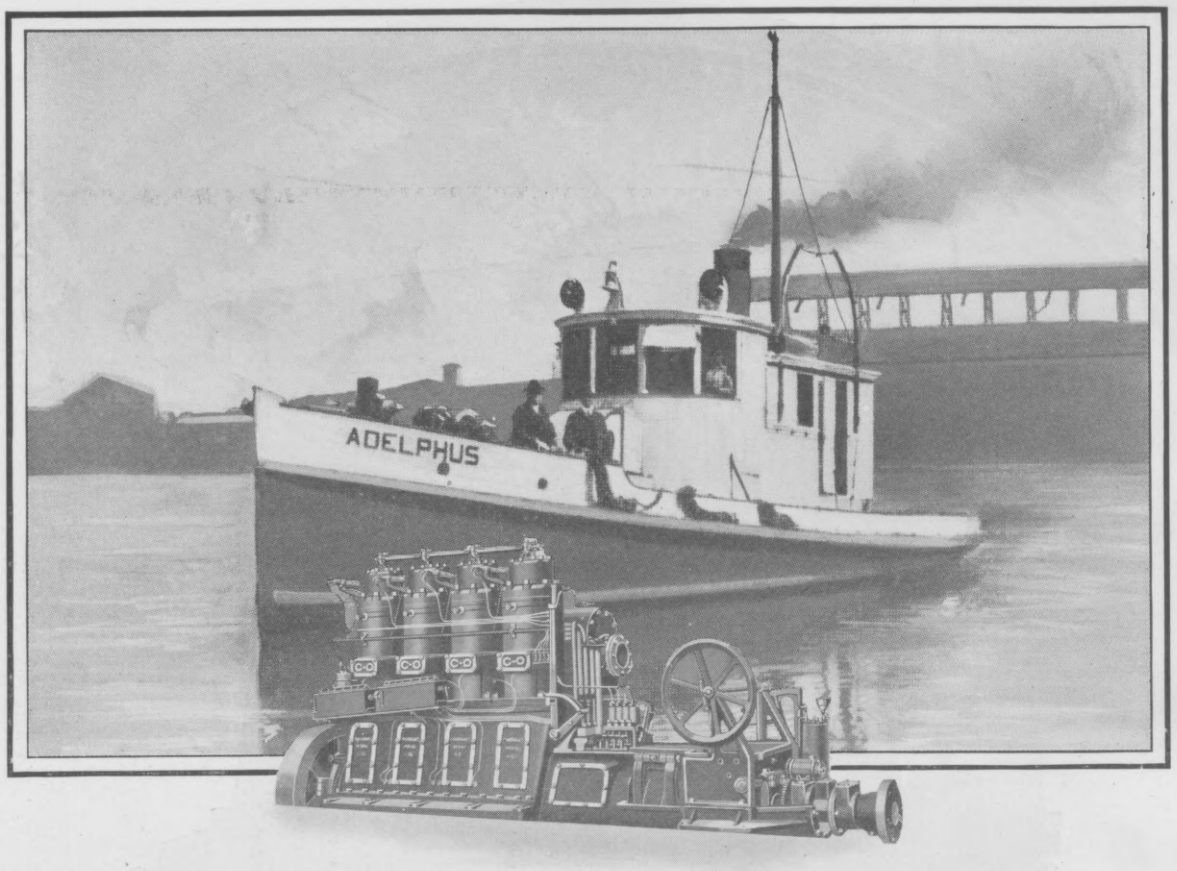


Proved best for work-boat use —

2-cycle "C-O" Oil Engine

Wherever work-boats run, you will find 2-cycle "C-O" engines at work on the hardest jobs.

The sturdy "C-O" does give super-dependability, year in and year out. The simple 2-cycle design is free from cams, valves, push rods, rocker arms and other trouble-making mechanism.

You have reliable power when you need it—to bring a cargo straight through for top market price — to get under way without loss of time or stand-by charges—to power your boat through fair weather and foul.

Use is the most convincing evidence of quality. Today, the trend of the trade is to 2-cycle design—pioneered by Fairbanks-Morse—**proved** best through more than a decade's use.

Fairbanks-Morse equipment can be serviced in all principal ports of call. Our engineers will be glad to give you full information.

FAIRBANKS, MORSE & CO.
Manufacturers Chicago
28 branches throughout the United States, each with a service station

FAIRBANKS-MORSE

Type "C-O" Oil Engines

A Test of Diesel Lubrication

The "Silverelm's" unbroken oil film

IF you could have boarded the S.S. "Silverelm" as she docked at the end of her recent maiden voyage, you would have seen a beautiful specimen of modern Diesel engine design.

And you would have seen visible evidence of the correct lubrication of this latest Diesel construction.

Two days after the ship came to rest, this photograph of the piston was taken. It had not been touched. You can see proof of the perfect condition of the cylinder—no scoring—no broken film—even distribution of the oil—GARGOYLE D.T.E. OIL.

Correct Lubrication with GARGOYLE D.T.E. OILS

These high-grade oils are of the correct body to meet all temperature and pressure conditions of Diesel engines. They assure minimum oxidation. Their immunity from contamination by impurities introduced by air, fuel and water are known to motorship engineers and owners throughout the world.

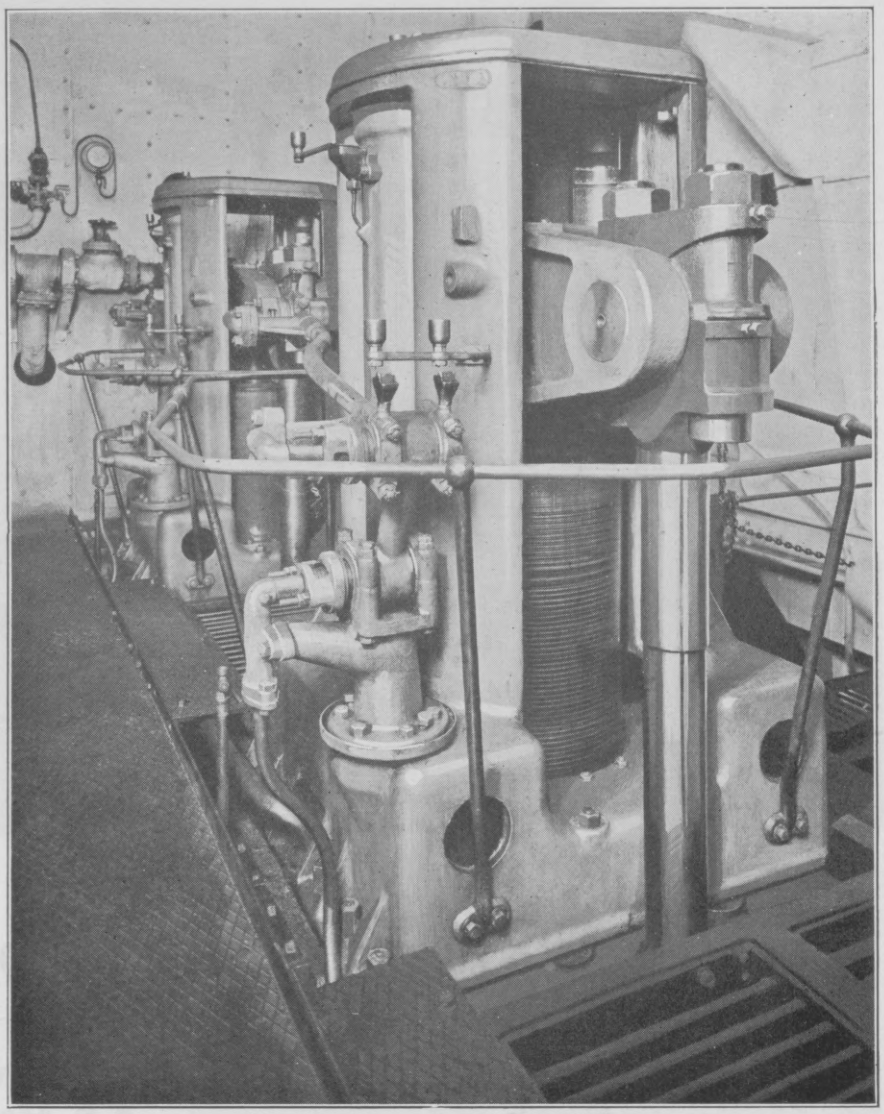
If you are not already using GARGOYLE D.T.E. OILS, we shall be glad to have an experienced representative confer with you on your lubricating problem, quote prices and arrange for deliveries.

Stocks of Gargoyle D.T.E. Oils may be secured at any one of 300 ports the world over. In writing, kindly address our New York office, at 61 Broadway.

GARGOYLE

Marine Oils

A grade for each type of service



Diesel engine on S. S. "Silverelm" of the Kerr-Roosevelt Line— lubricated with GARGOYLE D.T.E. OILS

Approved Practice in Diesel Engine Lubrication

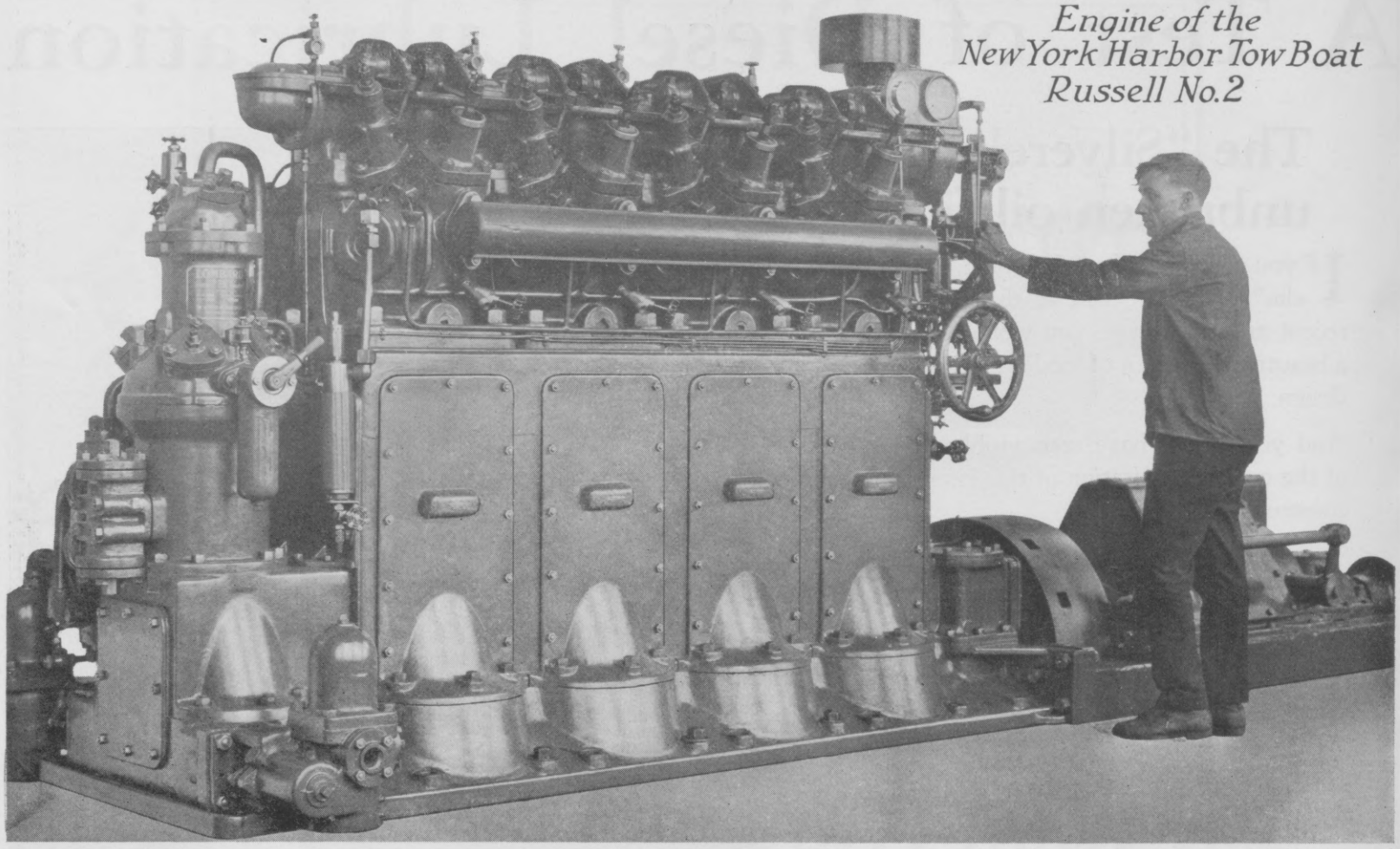
The Oils to Use

For Power Cylinders: GARGOYLE D.T.E. OIL EXTRA HEAVY—provides the proper body to form and maintain an oil film under the most severe conditions of Diesel engine operation.

For Air Compressor Cylinders: GARGOYLE D.T.E. OIL HEAVY X—successfully meets the conditions of high air pressures, high temperatures and moisture.

For Bearings: GARGOYLE D.T.E. OIL HEAVY MEDIUM—the oil is practically indestructible and will continue to furnish efficient and economical lubrication for long periods of time.

VACUUM OIL COMPANY *Specialists in the manufacture of high-grade lubricants for every class of machinery Obtainable everywhere in the world.* **NEW YORK, U.S.A.**



A New Standard of Accessibility

ALL working parts of LOMBARD ENGINES are designed for best results—minimum wear and longest life—and are designed and located for utmost facility of inspection and repair. The same standard is followed for small details as for major parts. This ease of access pays in added convenience and in saving of time and expense for maintenance.

Send for Bulletin 21-SM

THE LOMBARD GOVERNOR CO.
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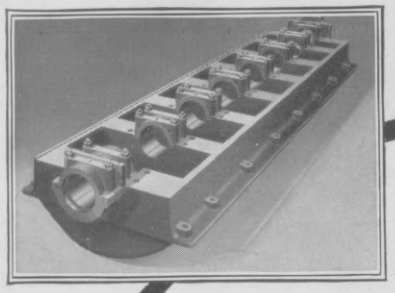
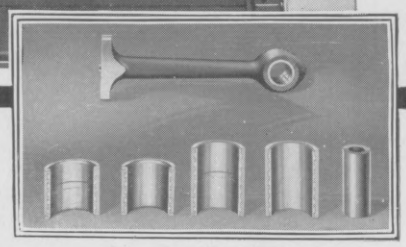
"Study the Structure"

DIESEL OIL ENGINES





Overstrength Base and Bearing-Shell Add Years of Service to Bessemer Diesels

The base and main bearings are the foundations for long life and continuous service of Bessemer-built Diesel engines.

Bases of Bessemer Diesel Engines are built to form a substantial support for the crankshaft, and are scientifically designed to give the maximum truss, both in cross section as well as in longitudinal directions.

The main bearings between each crank are supported by double walls. The bearings are full shell, lined with the finest non-ferrous metal, hand-scraped to fit the base and lubricated with a continuous pressure force feed lubrication system.

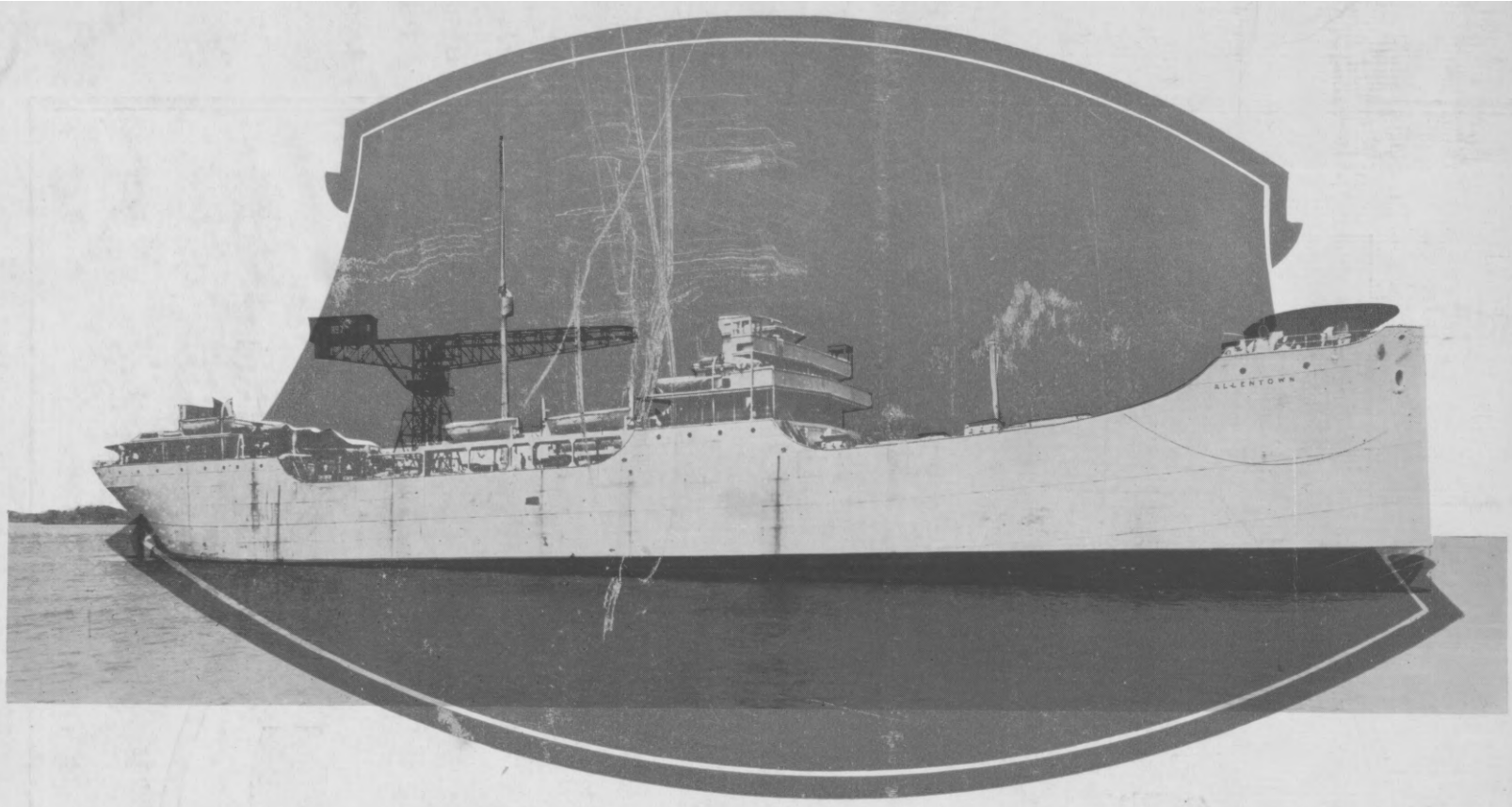
The outer and main bearings are provided with suitable lips and a sling ring is shrunk on the shaft which prevents oil leakage outside of the base. These recesses are drained back to the base to insure ample lubrication at a minimum of loss of lubricating oil. This also permits a cleanliness not possible with ordinary bearing design.

THE BESSEMER GAS ENGINE COMPANY

14 Lincoln Avenue :: :: Grove City, Pa.

BESSEMER

DIESEL ENGINES



"J. H. VAN DYKE" LUX EQUIPPED

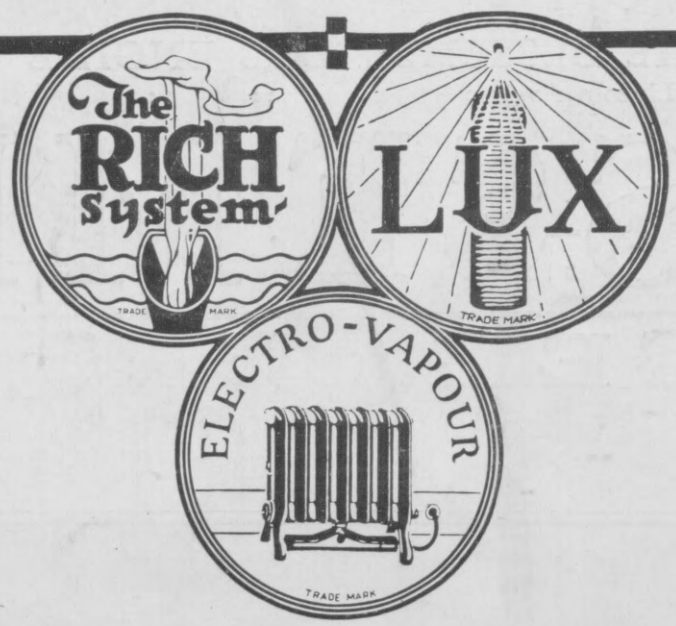
MOTOR room fires are extinguished without damage within a fraction of a minute. An accomplishment only possible with carbon dioxide Lux released.

So, the tanker "J. H. VAN DYKE" (formerly the S.S. Allentown), in her conversion has followed the European practice and is Lux protected.

The Lux System extinguishes fires above as well as below the floor plates. Carbon dioxide is easily removed by ventilation leaving no sludge to clean up.

Walter Kidde & Company, Inc.

140 Cedar Street, New York



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